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05909 U.S. PTO

PTO/SB/05 (08-03)

Approved for use through 07/31/2006. OMB 0651-0032

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UTILITY  
PATENT APPLICATION  
TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No. CL1375USCNT

First Inventor Edmund Arthur Flexman Et. Al.

Title TOUGHENED, HIGH-MODULUS POLYAMIDES  
AMENDED TITLE: TOUGHENED HIGH MODULUS MINERAL  
FILLED POLYOXYMETHYLENE POLYMERS

Express Mail Label No. EV 417442975 US

## APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

## ADDRESS TO:

Mail Stop Patent Application  
Commissioner for Patents  
P.O. Box 1450  
Alexandria VA 22313-1450

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17)  
(Submit an original and a duplicate for fee processing)
2. ☐ Applicant claims small entity status.  
See 37 CFR 1.27.
3. ☒ Specification [Total Pages 21]  
(preferred arrangement set forth below)
- Descriptive title of the invention
  - Cross Reference to Related Applications
  - Statement Regarding Fed sponsored R & D
  - Reference to sequence listing, a table, or a computer program listing appendix
  - Background of the Invention
  - Brief Summary of the Invention
  - Brief Description of the Drawings (if filed)
  - Detailed Description
  - Claim(s)
  - Abstract of the Disclosure
4. ☐ Drawing(s) (35 U.S.C. 113) [Total Sheets \_\_\_\_\_]
5. Oath or Declaration [Total Sheets \_\_\_\_\_]
- a. ☐ Newly executed (original or copy)
- b. ☒ Copy from a prior application (37 CFR 1.63(d))  
(for continuation/divisional with Box 18 completed)
- i. ☐ DELETION OF INVENTOR(S)  
Signed statement attached deleting inventor(s)  
name in the prior application, see 37 CFR  
1.63(d)(2) and 1.33(b).
6. ☐ Application Data Sheet. See 37 CFR 1.76

7. ☐ CD-ROM or CD-R in duplicate, large table or  
Computer Program (Appendix)
8. Nucleotide and/or Amino Acid Sequence Submission  
(if applicable, all necessary)
- a. ☐ Computer Readable Form (CRF)
- b. Specification Sequence Listing on:
- i. ☐ CD-ROM or CD-R (2 copies); or
- ii. ☐ Paper
- c. ☐ Statements verifying identity of above copies

## ACCOMPANYING APPLICATION PARTS

9. ☐ Assignment Papers (cover sheet & document(s))
10. ☐ 37 CFR 3.73(b) Statement of Power of Attorney  
(when there is an assignee)
11. ☐ English Translation Document (if applicable)
12. ☐ Information Disclosure Statement (IDS)/PTO-1449  
Copies of IDS Citations
13. ☐ Preliminary Amendment
14. ☒ Return Receipt Postcard (MPEP 503)  
(Should be specifically itemized)
15. ☐ Certified Copy of Priority Document(s)  
(if foreign priority is claimed)
16. ☐ Nonpublication Request under 35 U.S.C. 122  
(b)(2)(B)(i). Applicant must attach form PTO/SB/35  
or its equivalent.
17. ☐ Other: \_\_\_\_\_

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:

☒ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: 09/889,875, 07/20/2001

Prior application information:

Examiner K. Wyrozowski Lee

Art Unit: 1714

For CONTINUATION OF DIVISIONAL APPS only; The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

## 19. CORRESPONDENCE ADDRESS

☒ Customer Number: 23906 OR ☐ Correspondence address below

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Zip Code

Country

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Name (Print/Type)

William H. Hamby

Registration No. (Attorney/Agent)

31,521

Signature

Date

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

**FEE TRANSMITTAL  
for FY 2004**

Effective 10/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT

(\$) 1,370.00

**Complete if Known**

Application Number	Unknown
Filing Date	Unknown
First Named Inventor	Edmund Arthur Flexman Et. Al.
Examiner Name	Unknown
Art Unit	Unknown
Attorney Docket No.	CL 1375 US CONT.

**METHOD OF PAYMENT (check all that apply)**
☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None
☒ Deposit Account:Deposit  
Account  
Number  
Deposit  
Account  
Name

04-1928

E. I. du Pont de Nemours and Company

The Director is authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☒ Credit any overpayments☒ Charge any additional fee(s) or any underpayment of fee(s)☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.**FEE CALCULATION****1. BASIC FILING FEE**

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1001 770	2001 385	Utility filing fee	770.00
1002 340	2002 170	Design filing fee	
1003 530	2003 265	Plant filing fee	
1004 770	2004 385	Reissue filing fee	
1005 160	2005 80	Provisional filing fee	

SUBTOTAL (1) (\$) 770.00

**2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE**

Total Claims	Extra Claims	Fee from below	Fee Paid
-20** =	X	18	
-3** =	X	86	
Multiple Dependent <input type="checkbox"/> YES		290.00	

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1202 18	2202 9	Claims in excess of 20	
1201 86	2201 43	Independent claims in excess of 3	
1203 290	2203 145	Multiple dependent claim, if not paid	
1204 86	2204 43	** Reissue independent claims over original patent	
1205 18	2205 9	** Reissue claims in excess of 20 and over original patent	

SUBTOTAL (2) (\$) 0.00

\*\*or number previously paid, if greater; For Reissues, see above

**FEE CALCULATION (continued)****3. ADDITIONAL FEES**

Large Entity Small Entity

Fee Code (\$)	Fee Code (\$)	Fee Description	Fee Paid
1051 130	2051 65	Surcharge - late filing fee or oath	
1052 50	2052 25	Surcharge - late provisional filing fee or cover sheet	
1053 130	1053 130	Non-English specification	
1812 2,520	1812 2,520	For filing a request for <i>ex parte</i> reexamination	
1804 920*	1804 920*	Requesting publication of SIR prior to Examiner action	
1805 1,840*	1805 1,840*	Requesting publication of SIR after Examiner action	
1251 110	2251 55	Extension for reply within first month	
1252 420	2252 210	Extension for reply within second month	
1253 950	2253 475	Extension for reply within third month	530.00
1254 1,480	2254 740	Extension for reply within fourth month	
1255 2,010	2255 1,005	Extension for reply within fifth month	
1401 330	2401 165	Notice of Appeal	
1402 330	2402 165	Filing a brief in support of an appeal	
1403 290	2403 145	Request for oral hearing	
1451 1,510	1451 1,510	Petition to institute a public use proceeding	
1452 110	2452 55	Petition to revive - unavoidable	
1453 1,330	2453 665	Petition to revive - unintentional	
1501 1,330	2501 665	Utility issue fee (or reissue)	
1502 480	2502 240	Design issue fee	
1503 640	2503 320	Plant issue fee	
1460 130	1460 130	Petitions to the Commissioner	
1807 50	1807 50	Processing fee under 37 CFR 1.17(q)	
1806 180	1806 180	Submission of Information Disclosure Stmt	
8021 40	8021 40	Recording each patent assignment per property (times number of properties)	
1809 770	2809 385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810 770	2810 385	For each additional invention to be examined (37 CFR 1.129(b))	
1801 770	2801 385	Request for Continued Examination (RCE)	
1802 900	1802 900	Request for expedited examination	
* 2 mth ext. previously paid			
Other fee (specify)			

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$) 0.00

**SUBMITTED BY**

(Complete if applicable)

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Signature

Date

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If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN THE APPLICATION OF:

EDMUND ARTHUR FLEXMAN ET. AL.	CASE NO.: CL1375USCNT
APPLICATION NO.: UNKNOWN	GROUP ART UNIT: UNKNOWN
FILED: CONCURRENTLY HEREWITH	EXAMINER: UNKNOWN
FOR: TOUGHENED, HIGH-MODULUS POLYAMIDES	
AMENDED TITLE: TOUGHENED HIGH MODULUS MINERAL FILLED	
POLYOXYMETHYLENE POLYMERS	

**PRELIMINARY COMMUNICATION**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Prior to examination of this application kindly consider the following remarks:

In related Application No 09/889,875 the Examiner issued an Advisory Action mailed February 19, 2004. Applicant would like to make the following observations regarding the points raised in the Advisory Action, and in the interest of further illustrating the patentability of the instant claims.

The Examiner has written that:

"The property studied by the prior art of ASHIM is izod impact of the composition and its tensile strength. In fact applicants own Examples (1&2, table 2) report having Izod Impact that lies squarely in the middle of those disclosed in saturated acids of ASHIMA. Therefor ASHIMA disloses the composition, even if in comparative examples. Present invention teaches izod impact of 1.3 while ASHIMA teaches 1.4, 1.8 and 1.6 in the reference examples 4-1 through 4-3 depicted by the applicants"

The Examiner compares Izod impact values of 1.4 in the present invention with values of 1.4, 1.8, and 1.6 in Aishima. However Applicant's Izod impact values are reported in units of **ft-lb/in**, while Aishima reports values in units of **kg-cm/cm**. The respective units are clearly indicated in the respective tables of the respective documents. It is apparent that such values are not directly comparable, as 1 ft-lb/in is about 0.184 kg-cm/cm. Thus, 1.8 kg-cm/cm is about 0.33 ft-lb/in and 1.4 kg-cm/com is about 0.26 ft-lb/in. 1.3 ft-lb/in is therefore

significantly larger than the Izod impact strengths disclosed by Aishima in reference examples 4-1 through 4-3.

Furthermore, the reference examples 4-1 through 4-3 of Aishima are **polyethylene** compositions containing **calcium carbonate** (see col. 8, line 62 - col. 9 line 2; col. 6, line 63 - col. 7, line 23 (and in particular line 10); and Table 1) while examples 1 and 2 in Table 2 of the present invention are **nylon 6** containing **titanium dioxide**. The examiner has stated that "ASHIMA discloses the composition, even if in comparative examples" when, in fact, Aishima has not done this. Applicant contends that there is no reason for one to expect polyethylene and nylon compositions to have comparable Izod impact strengths, and respectfully submits that comparisons between them are not appropriate.

The benefit of Applicant's invention is the improvement in stiffness and impact resistance provided by the addition of the claimed mineral fillers to nylon 6, nylon 66, or a mixture thereof in the presence of a saturated organic acid (or salt thereof) over compositions that do not contain the saturated organic acid. This improvement is amply shown in the examples. Aishima, on the other hand, discloses that certain improved mechanical properties can be obtained from compositions comprising a thermoplastic and an inorganic filler "having been prepared by effecting reaction between an inorganic material [...] and [...] at least one unsaturated aliphatic or aromatic carboxylic acid having from 3 to 11 carbon atoms" (abstract). Reference examples 4-1 and 4-2 of Aishima show that the use of saturated organic acids do not provide the same benefit.

The examiner has also written that:

"In addition to the above the prior art of Metzemacher teaches the equivalents of the unsaturated and saturated fatty acids in col. 2, lines 32-45), which would render even more obvious to utilized saturated fatty acid of Metzemacher in the composition of ASHIMA."

Metzemacher discloses "a surface-modified filler composition [...] for flameproofing polymers" (col. 1, lines 6-7). Metzemacher does not teach that the filler composition improves the mechanical properties of polymers. It is respectfully submitted that one would have had no motivation to use the fatty acids disclosed in Metzemacher in the compositions of Aishima to provide a composition with improved mechanical properties, particularly since Aishima explicitly teaches that saturated acids do not work.

Favorable consideration of the instant claims in view of the above remarks is respectfully solicited.

Respectfully submitted,



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Dated: February 25, 2004